

is eight feet. The building will cost, when completed, \$5,000.

#### Good Work and True Work.

There is nothing shoddy in any part of the construction of this road, and the representative of The Times-Dispatch who took a ride over it from Ashland to Richmond traveled on a flat car drawn by a construction engine, and found that the eighty-pound steel rails admitted of as smooth and easy riding, even on a flat car as he experiences on many of the well equipped steam roads now operating in Virginia, and he is remembered, the track has just been laid and the ballasting is far from being completed. At some points on the line where the track is as straight as an arrow and the ballasting has been nearly completed, Engineer Gordon, who was at the throttle, let the "smart" engine out for the edification of The Times-Dispatch writer, and it is a fact that the riding was as smooth as that experienced on a Pullman car on some of the crack roads.

The rails are what are known as 80-pound steel—that is, the steel weighs eighty pounds to the yard. Very few railroads in the country use rails heavier than ninety pounds to the yard, and none have cross ties laid thicker than 2,600 to the mile, the most of them having less, down to 2,400. The Richmond and Chesapeake Bay has laid 2,816 cross ties to the mile.

#### Magnificent Bridges.

The ballasting is being done in first-class manner, the company having found a magnificent deposit of gravel on its property five miles from Ashland. This gravel pit is being worked by a large force of hands, and the work train is hauling the material out on the line at a rapid rate to the ballasting forces, and this work is being pushed just as rapidly as weather conditions permit. In some places the road runs through deep cuts that are soggy, and it will require a vast deal of gravel to properly ballast at these points, but the pit has an inexhaustible supply, and within a month these long, deep and soggy "cuts" will be as smooth and as solid as any other parts of the line.

The culverts, bridges and arches that have been erected over the various streams the line crosses are magnificent pieces of workmanship, being made of concrete, and in some cases partly of steel with concrete reinforcement and covered with concrete. The arch over the Chickahominy River is a magnificent structure, and in all respects is a beautiful piece of workmanship, well worth going miles to see. The North Run arch and the Upham Brook arch are also beautiful specimens of workmanship. All of the bridges and arches, and in fact all of the grading and all of the cuts, are broad gauge, admitting of a double track, although only the single track will be laid at present, with ample sidings for passing points for the cars. The company's right-of-way is not less than a hundred feet at any point, except on the bridge over Turnpike, where thirty feet is the width.

#### Almost Straight.

There is only one sharp curve on the line from here to Ashland, and that is at Brook Hill. The sharp curve was unavoidable there to prevent running the line through a cemetery. The curves, and few there are, are gradual, as well as graceful. The most of the line is straight, and there is one stretch of six miles that is as straight as an arrow. The trolley cars, when they get on this six-mile tangent will be able to make a speed that will make some of the steam lines of the country ashamed of themselves. It is expected that the cars will make the trip from Richmond to Ashland in twenty-five minutes, and the cars at first will leave Ashland and Richmond every hour during the day, and probably there will be a late night car each way.

Small stations will be established at convenient places along the line, about fifteen in all, or one to the mile. These station houses for the present will be small shed rooms supplied with seats for passengers. Later on some of the intermediate stations will be more pretentious and will have ticket offices. The fare between Ashland and Richmond will probably be thirty cents, and to intermediate points the flat rate per mile rate will be adhered to.

The work of constructing this splendid road to Ashland has been well done and so quietly done that it hardly attracted notice except where people saw the forces at the actual work.

#### How Work Was Done.

Several years ago the Virginia Passenger and Power Company ran a line from here to Ashland with a view some day of extending their lines to the college town, but the first real survey was made by the Richmond and Chesapeake Bay road. This was commenced in March, 1905, and carried on to Tappahannock. In order to get as straight a line as possible the surveying party to Ashland with as little grade as possible more than the usual time was taken in making the survey, but it was completed before the end of the summer of 1905. This work of construction was commenced in December following, but owing to the trouble of getting right of way at all points large forces could not be utilized to advantage, and there were months of delay in the work. When all these troubles had been overcome the work was rushed at every point where it could be done.



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LOW shoes are the vogue. And certainly daintier, prettier shoes never graced the feet of exacting, fashionable femininity than this season's "Dorothy Dodd" Oxford Ties and Pumps. We wish you to see these new styles. You have the choice of Glazed Kid, Gun Metal and Patent Leathers with every pair moderately priced: Three-fifty and Three Dollars. A few styles at Two-fifty

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Third and Broad Streets.

consistent with good and perfect workmanship. All of the work has been done without much regard to cost, but with a view of making the road one of the best built and one of the most substantial in the country. Experts pronounce the fifteen and a fraction of miles now practically completed a splendid piece of work, even a wonderful achievement.

As a starter, the line will be equipped with magnificent cars of size sufficient to carry sixty passengers. The cars are beautiful inside and out. They are arranged with apartments for white and colored, with smoking-rooms for both, and they are to be heated in winter by electricity. No such trolley cars are to be seen anywhere else in the South. In fact, one looking at them as they stand on the track awaiting the straining of the wire, which is to give them moving life, would imagine they were built to be run on the regular steam lines.

#### The Wonderful Viaduct.

But, after all, the biggest, the most magnificent and the costliest part of the work on this line is the viaduct upon which its cars will come into the city and to the Broad Street station.

No such work as this was ever before attempted in Virginia, and to a layman it is all Greek. The following description of the viaduct and its manner of construction is made from comprehensive notes furnished by Mr. J. H. McLaure, the chief engineer of the road.

The road enters Richmond almost directly from the north, and in order to reach the property acquired for the terminal station on Broad Street, it was necessary to carry the line across "the valley" through which runs Bacon Quarter Branch.

Bacon Quarter Branch is the corporation line of the city of Richmond, and is almost paralleled by the main line of the Seaboard Air Line Railroad. The southern slope of the valley of Bacon Quarter Branch is solidly built up, and streets on which there is much traffic occur about 300 feet apart, so that it was important that no grade crossing be had. It was, therefore, determined to have an elevated viaduct station at Broad Street, and that the entire line from the abutment on Stead Street in Henrico county should be on an elevated structure. This meant a viaduct over 2,800 feet long and ranking in height from eight feet at either end to a height of 100 feet at the center. A riveted-girder viaduct was first considered, but was rejected on account of the present high first cost and cost of maintenance, as well as the difficulty of double-tracking such a structure, should this become necessary. A welded-trestle viaduct spanning the streets only was then planned and carried so far as to have lumber ordered and partially delivered. The great danger of such a structure being destroyed by fire, as well as the necessarily temporary character of wood construction, caused the officers of the company to turn to reinforced concrete as a modern, strong, permanent and handsome construction.

#### Bids Asked For.

Maps of the located line, together with profiles giving the grades and restrictions as to span and head room of street crossings, etc., were sent to a great number of the more prominent reinforced concrete firms of the country, and they were asked to submit bids for a structure upon their own design, guaranteed to carry the prescribed load and not to have undue deflection under a test load of double the designed load. A number of bids were received, differing greatly in design and cost. The design accepted was submitted by the New York branch of the Trussed Concrete Steel Company, of which Mr. R. J. Greenhead is chief engineer. This company was to furnish all steel for construction under the Kahn system of reinforcing concrete, and Mr. John T. Wilson, of this city, was the successful contractor to do the construction work.

The viaduct was designed to carry a train of cars, a fifty-foot long over all and weighing 150,000 pounds on four-wheeled trucks placed thirty-three feet centre to centre. The wheels on each truck were seven feet apart, and the nearest wheels of one of the adjoining cars were fourteen feet centre to centre.

The design consists essentially of a system of girders of rectangular cross-section supported by towers. Each tower is made with two vertical bents, each having two columns six feet nine inches apart on centres at top and battered 1 to 6. They are of square cross-section and reinforced with from four to nine steel bars, the steel being placed for transverse strains only and the concrete to take the compression. The longitudinal struts and transverse bracing are all horizontal.

#### Lengthy Spans.

The girders follow the grade and are rectangular in cross-section, except at the span across Marshall Street, where the desired depth could not be used on account of the city limiting the company to a clear headway of fourteen feet. These girders could not be made deep enough to take care of the bending moment, and as the railway company did not care to get any higher than was absolutely necessary, it became a problem of the designing engineer how best to span this street.

It was found that with girders sixty inches deep, the depth allowed here, that the beam would not contain enough concrete to take the compression stresses. A T-shaped beam was finally decided on.

The spans vary in length from twenty-three feet six inches to sixty-seven feet five inches, centre to centre of bents, the long spans being used at the crossings of the Seaboard Air Line Railroad and streets which had to be crossed with a clear span. Expansion in the structure is taken care of by expansion joints placed at intervals of about 200 feet, consisting of a grooved steel plate on top of the bent, on which a planed steel plate on the bottom of the girder slides, while a sliding toggle near top of girder prevents any tendency to turn the girder. The accompanying general elevation shows the entire arrangement of spans. On account of unavoidable circumstances, it was necessary to put two seven-degree curves in the viaduct, both in the same direction. The grade is upward from the north end of the viaduct to about 200 feet from the terminal, which point it becomes level. The grade on the tangent is plus 1.10 per cent, and on curves plus 0.7763 per cent, there being a total difference in elevation of twenty-five feet between the two ends of the structure.

The concrete of a 12-24 mixture, was figured for a compressive stress of 500 pounds per square inch and shear of fifty pounds, while the steel used was given a tensile stress of 16,000 pounds; compression, 60,000 pounds, and shear of 10,000 pounds per square inch of cross section. The modulus of elasticity of concrete to steel was taken as 1:12, and the percentage of steel to be less than 1.45 per cent.

#### Wilson Commenced Work.

Work on the viaduct was begun by Contractor Wilson in the latter part of May, 1906, and was quite slow until the contractor got a system of operations fully established. Work was started at two points, the northern end and about the middle, and both forces worked southward. The footings for the columns were first put in, having four three-quarter-inch rods projecting four feet, around which the column was built, and also a pocket for the bottom of the column. The foundations were either hard clay or compact gravel, and were calculated for a pressure not to exceed 6,000 pounds per square foot. As the structure was designed so that it could be readily double-tracked, when necessary, the footings were made twice as large as they would have been if designed simply for a single track, and a four-foot stump of a column was left on which the future double-track column will rest. When traffic justifies double-tracking the viaduct it will be easy to construct an additional girder with proper supports, on one side of the viaduct, shift the track so that it will be supported by the new girder and one of the original girders and carry the traffic on this track during the construction of the additional girder. A new track on the other side. Cored holes were provided to take care of fastening new work to the old when double-tracking is begun. The footings were carried down a uniform depth of four feet, unless extra depth was required to get suitable foundations.

The viaduct proper was completed in the early part of the year, and experts from various parts of the country have been here to look upon the work. All pronounce it great.

#### REAL ESTATE AND BUILDING NEWS

(Continued from First Page.)

Glinter Park, at Forest Hill Park, and even as far out as Bon Air, is on a boom.

Out at Highland Park progress and development are the watchword. A large number of people have been attracted there by the many advantages this fine property offers the home-seeker. Again selling has been very active, and the Highland Park Company have sold nineteen lots the past week.

Among the recent purchasers several have admitted that they have lived in Richmond for several years, and never before had been to Highland Park and were surprised to find such a beautiful residence park with all the attractions of the country and with so many city improvements, and so convenient to the centre of Richmond.

#### California Fruit Shipments.

LOS ANGELES, June 22.—There were shipped from Southern California Friday 110 carloads of oranges and 16 carloads of lemons; Saturday and Sunday, 202 carloads of oranges and 26 carloads of lemons. Total shipments of citrus fruits to date this season, 23,613 carloads.

#### PEANUT INDUSTRY; WHAT WE IMPORT

Virginia and North Carolina Lead as Goover-Producing States. Georgia Comes Next.

#### PEANUTS COMING FROM JAPAN

Judge Yarrell's Prophecy Coming True—Nut-Growers May Become High Protectionists.

BY WALTER EDWARD HARRIS.

WASHINGTON, D. C., June 22.—Virginia and North Carolina supply two-thirds of the peanuts raised in the United States, according to a statement issued by the Department of Commerce and Labor. Despite the fact that the United States produces probably 12 million bushels of peanuts a year, the exports of the nut from this country have been so inconsiderable that the department has only recently begun to include them in statistics of the foreign trade.

The question of a tariff on peanuts has been agitated in Virginia. Judge Leonidas D. Yarrell, of Greenville county, when a candidate for the nomination for Congress from the fourth Virginia District three years ago, made an unsuccessful race on a platform the chief plank in which was protection for peanuts. It was alleged by his opponents that there was no danger of foreign peanuts ever coming into this country in appreciable quantities, but Judge Yarrell asserts that even now the peanut trust has a Virginian stationed in Spain buying peanuts for export to America.

However, the figures of the department show that Japan is the only country sending peanuts to America in any considerable quantities. The total imports into this country for the nine months ending March, 1907, were 400,000 bushels. Exports of peanuts from the United States will amount to about 300,000 bushels. The value of the imports it is estimated, will reach about \$500,000.

#### The Facts and Figures.

The report of the Agricultural Department says:

Prices of peanuts have also greatly advanced in the foreign markets, the average valuation of imported peanuts, based upon wholesale prices in the markets from which they are sent to the United States, having advanced from 1.1 cents per pound in 1898 to 3.4 cents per pound in 1907, for those in the natural state, and that of shelled peanuts imported in 1898 was 2.4 cents per pound, and in 1907, 4.5 cents.

West Africa and the East Indies are the principal sources of supply of the peanuts entering the international markets of the world. The exports of peanuts from the French colony of Senegal on the west coast of Africa were, in the year 1906, over 300 million pounds; those of British India, a little less than 200 millions; Gambia, on the west coast of Africa, about 100 millions; the Dutch East Indies, about 50 millions; while China, Japan, Argentina, Spain, and the United States supply comparatively small quantities.

The striking feature of our own trade in peanuts is the rapid growth in imports. The quantity imported a decade ago, in the fiscal year 1897, was less than 150,000 pounds; in 1903, over 1 million; in 1905, more than 5 millions; and in 1907 seems likely to be about 12 million pounds, of which about one-fourth represents shelled and three-fourths unshelled peanuts, the value being, as above stated, approximately a half-million dollars for the present fiscal year, while that of exports will be over one-quarter of a million dollars.

#### Virginia Farmers, Take Notice.

Since the peanut crop of this country is not estimated annually by the Department of Agriculture, the only official data in regard to both the acreage and the production are those collected by the decennial census. A comparison of the Eleventh and Twelfth Censuses shows that the growing of peanuts has been rapidly extending in this country, the acreage in 1889 being 264,000 acres and in 1899 517,000 acres, an increase of over 150 per cent, while the production has increased from 5,588,000 bushels to 11,925,000 bushels, or about 233 per cent. The crop is concentrated in a few Southern States, Virginia supplying about one-third of it, North Carolina about another third, and five States (Georgia, Alabama, and Florida in addition to the above mentioned) claiming in 1899 about 90 per cent. of the acreage and crop.

In comparison with this production the foreign trade is as yet insignificant.

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is an instrument of the highest standard of excellence and heads the list of the highest grade Pianos.

Of course you can buy cheaper pianos than the Stieff, but when you take into consideration the very fine quality of this very celebrated instrument the price we ask is most reasonable.

We have several used pianos which have been rented out during the past season, and which are in perfect condition—as good as new. We offer these instruments at very unusual values, allowing on each a BIG DISCOUNT FROM THE REGULAR PRICES.

Be sure to investigate the merit of the Stieff before buying.

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#### Specials in Our Taken-in-Exchange Stock for Week Beginning June 24th.

One Mason & Hamlin Upright, full size; in perfect condition.

\$255.00

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One full sized Upright, 7 1-3 octaves; three pedals; in perfect condition, only.

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One Mason & Hamlin Upright, full size.

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Square Pianos and Organs from

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These instruments were all traded in as part payment on a "STIEFF." Special attention given to out-of-town correspondence.

## Chas. M. Stieff,

The Old Reliable Piano House,

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205 East Broad Street.

L. B. SLAUGHTER, Manager.

cant, the highest imports amounting in the nine months ending March, 1907, to about 400,000 bushels, or less than 4 per cent. of the crop of 1899, while the exports were about 325,000 bushels, or less than 3 per cent.

#### Incomplete Statistics.

The world production of peanuts is considerable, but since the greater part of it is grown in countries of lower civilization, the statistical data in regard to the world crop are very incomplete. As judged by the statistics of foreign trade, the main peanut-producing countries are tropical regions, namely, a few colonies in Africa (Senegal and Gambia), British India, Dutch East Indies, China and Japan in Asia, Argentina in South America, and Spain in Europe. The total exports of these eight countries amounted, in 1900, to 21,000,000 bushels; in 1901, to 21,000,000 bushels; in 1902, to 23,000,000; in 1903, to 32,000,000; and in 1904, to 30,000,000 bushels, valued approximately at \$15,000,000. In addition to these countries, several colonies in Africa have been for the last few years exporting small quantities, such as French Guinea, Dahomey, Ivory Coast; but these exports are as yet without commercial importance. Of the total exports, which may be considered equivalent to the world's trade in peanuts, about one-half was supplied by the French African colony of Senegal alone, the British African colony of Gambia supplying about 15 per cent., so that two-thirds came from these two African colonies. British India's share constituted from 20 to 30 per cent., so that about 30 per cent. is supplied to the world market by these three countries.

Books that mock at religion are classified as a menace to Christianity by Monsieur Bruchet, archbishop of Montreal, who has formally protested to the city authorities against their admission to the public library.

#### BUY TIMBER ON MOUNTAIN TRACT

Purchasers, Averill & Mitchell, Will Market Product—Owners Retaining Cleared Land.

[Special to The Times-Dispatch.] FLOYD, VA., June 22.—Averill & Mitchell of Christiansburg, have recently purchased the timber of 3,900 acres of land, in the west end of the county, on Max Mountain. The mountain is a perfect wilderness, and is covered by timber of the finest description, most of which is pine, the owners selling the timber only, while the land when cleared, will belong to the original owners, Averill & Mitchell, getting the timber. This land when opened up will furnish good grazing, as it is considered fine for grass, and the sale will be a great help to the people in that section.

#### Virginia Patents.

WASHINGTON, D. C., June 22.—Messrs. Davis & Davis, patent attorneys, report the grant, this week, to Peter Freeman, of Braddock Heights, production of printing-ink pigments. Julius A. Grabberger, of Richmond, fifth-wheel.

#### Matting.

Cool, lasting, handsome and low in price. CHINA MATTINGS, good, heavy grades, 20 and 25c. Hand Palmed kind, 35 and 40c. JAPANESE MATTING, special edge, 25 and 28c. Very fine at 70c. GREAT BARGAINS—36-inch Matting Rugs at 59c.

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